Application No.: 10/590,011

REMARKS

This Amendment is filed in response to the final Office Action dated March 2, 2010. For the following reasons this application should be allowed and the case passed to issue. No new matter is introduced by this Amendment. The amendment to claim 1 is supported by the specification at page 6, lines 3 and 21-22.

Claims 1, 3-6, and 8-15 are pending in this application. Claims 8-15 were withdrawn pursuant to a restriction requirement. Claims 1 and 3-7 were rejected. Claim 1 is amended in this response. Claim 7 is canceled in this response. Claim 2 was previously canceled.

Claim Rejections Under 35 U.S.C. § 102

Claims 1, 5, and 7 were rejected under 35 U.S.C. § 102(e) as being anticipated by Dai et al. (US 6,401,526). This rejection is traversed, and reconsideration and withdrawal thereof respectfully requested. The following is a comparison between the present invention, as claimed, and the cited prior art.

Dai et al. do not anticipate the claimed catalyst structure because Dai et al. do not disclose the catalyst structure is a shaped as a pipe with its even upper surface serving as a crystal growth surface, and the catalyst structure includes a catalytic material that forms a ring on the crystal growth surface, as required by claim 1.

In the present invention, a catalyst structure is a shaped as a pipe with its even upper surface serving as a crystal growth surface, where at least a part of the side of the structure shaped as a pipe has a non-catalytic material that has substantially no catalytic activity with respect to the growth of crystalline carbon, such that the non-catalytic material prevents the crystalline carbon from being spread in direction of the crystal growth surface during crystal growth, which allows crystals to be grown in a controlled direction, thereby enabling the

formation of a carbon nanotube with a more homogenous geometry (Specification at page 6, lines 8 to 15).

Dai et al., on the other hand, only disclose pyramidal or conical silicon tip arrays and fails to teach or suggest the structure of the present invention.

Applicant further submits that Dai et al. do not suggest the claimed catalyst structure.

Claim Rejections Under 35 U.S.C. § 103

Claims 1 and 3-5 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Delzeit (US 6,858,197).

Claim 6 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Delzeit in view of Fan et al. (Science vol. 283, pages 512-514, (1999)).

These rejections are traversed, and reconsideration and withdrawal thereof respectfully requested. The following is a comparison between the present invention, as claimed, and the cited prior art.

Delzeit and Fan et al., whether taken in combination, or taken alone, do not anticipate or render obvious the claimed catalyst structure because Delzeit and Fan et al. do not disclose or suggest the catalyst structure is shaped as a pipe with its even upper surface serving as a crystal growth surface, and the catalyst structure includes a catalytic material that forms a ring on the crystal growth surface, as required by claim 1. Fan et al. do not cure the deficiencies of Delzeit.

Obviousness can be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge readily available to one of ordinary skill in the art. *In re Kotzab*, 217 F.3d 1365, 1370 55 USPQ2d 1313, 1317 (Fed. Cir. 2000); *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992); *In re Fine*,

837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988). There is no suggestion in Delzeit or Fan et al. to modify the catalyst structure of Delzeit to obtain a catalyst structure that is shaped as a pipe with its upper surface serving as a crystal growth surface, the catalyst structure including a catalytic material that forms a ring on a crystal growth surface, and at least part of a side of the structure shaped as a pipe has a non-catalytic material with substantially no catalytic activity with respect to a growth of the crystalline carbon, as required by claim 1.

The only teaching of the claimed catalyst structure is disclosed in Applicant's specification. However, the teaching or suggestion to make a claimed combination and the reasonable expectation of success must not be based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

The dependent claims are allowable for at least the same reasons as claim 1, and further distinguish the claimed catalyst structure. For example, claim 5 further requires the crystal growth surface has a multilayer structure with catalytic and non-catalytic material. The cited references do not suggest catalyst structures with this additional limitation.

In view of the above amendments and remarks, Applicant submits that this application should be allowed and the case passed to issue. If there are any questions regarding this Amendment or the application in general, a telephone call to the undersigned would be appreciated to expedite the prosecution of the application.

Application No.: 10/590,011

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

McDERMOTT WILL & EMERY LLP

Bernard P. Codd

Bernard P. Codd
Registration No. 46,429

600 13th Street, N.W.
Washington, DC 20005-3096
Phone: 202.756.8000 BPC:MWE
Facsimile: 202.756.8087
Date: June 2, 2010

Please recognize our Customer No. 20277 as our correspondence address.